HETEROPHYID INFECTION IN HUMAN ILEUM:
REPORT OF THREE CASES

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In Thailand, Manning *et al.*, (1971) reported finding *Haplorchis yokogawai* and *H. taichui* adults in several human autopsies in Northeastern Thailand. In certain areas of Asia, *Heterophyes heterophyes*, *Metagonimus yokogawai*, *Haplorchis yokogawai* and *H. pumilio* are known to be endemic and at least six other heterophyids occasionally have been recovered from man (Faust *et al.*, 1971).

Stellanthchasmus falcatus was firstly described in man by Africa and Garcia (1935) in the Philippines and later by Alicata and Schattenberg (1938) in Hawaii. As the ova of heterophyid flukes superficially resemble those of *Opisthorchis* and *Clonorchis*, many heterophyid infections have been assigned erroneously to the common liver fluke. Despite numerous stool surveys, *S. falcatus* has not been previously detected in Thailand in man or animals.

In 1972, Ratanasritong and Kliks recovered different metacercariae from the flesh of the local fish in Chiang Mai. Cysts removed from the fins of *Dermogenys pusillus* were fed to one previously uninfected cat, laboratory rats, mice and chickens. Eggs of a fluke appeared in the faeces of cat after 13 days, and numerous adults were recovered from the ileum at autopsy after 40 days. Previously two human cases were reported by Kagei *et al.*, in 1964 in Japan and one case in Chiang Mai, North Thailand (Kliks and Tantachamrun, 1974).

This present paper reports the finding of *Stellanthchasmus falcatus* infection in three patients, in the terminal ileum, which were surgically removed who had different chief complaints.

Case 1 : A 16-year-old young man (H.N. 605434) from Jomthong province, Chiang Mai, Thailand was admitted to the Surgical Ward on October, 19, 1974 because of gun shot wound at 4.0 cm below the umbilicus. On exploratory laporatomy 13 bullet inlets were observed at jejunum and ileum, the biggest one was located 6 inches from the ileocaecal valve. All the bullet inlets was closed by simple sutures. Four short segment of terminal ileum was segmentally resected with end to end anastomosis. Postoperatively, the course was uneventful and the patient was discharged on the seventh post-operative day. Pathological findings: (517-5854) Specimens received composing of four short segments of terminal ileum measuring together 30 cm in length with attached mesentery. All segments of bowel were coated by fibrinopurulent exudate. Histologic sections showed a section of Heterophyid worm at the bottom of a mucosal crypt.

Case 2: A 27-year-old Thai woman farmer (H.N. 05320.20) from Chiang Kam was admitted to Chiang Kam Hospital because of amenorrhea for one month with bulging of abdomen and abdominal pain for 2 days duration. Preoperative diagnosis was ectopic gestation. Operative findings revealed normal uterine tubes and no evidence of gestation. An inflammed segment of terminal ileum was noted. Resection of the inflammed bowel was done. Postoperative course was uneventful. Pathological findings (520-0954): A por-

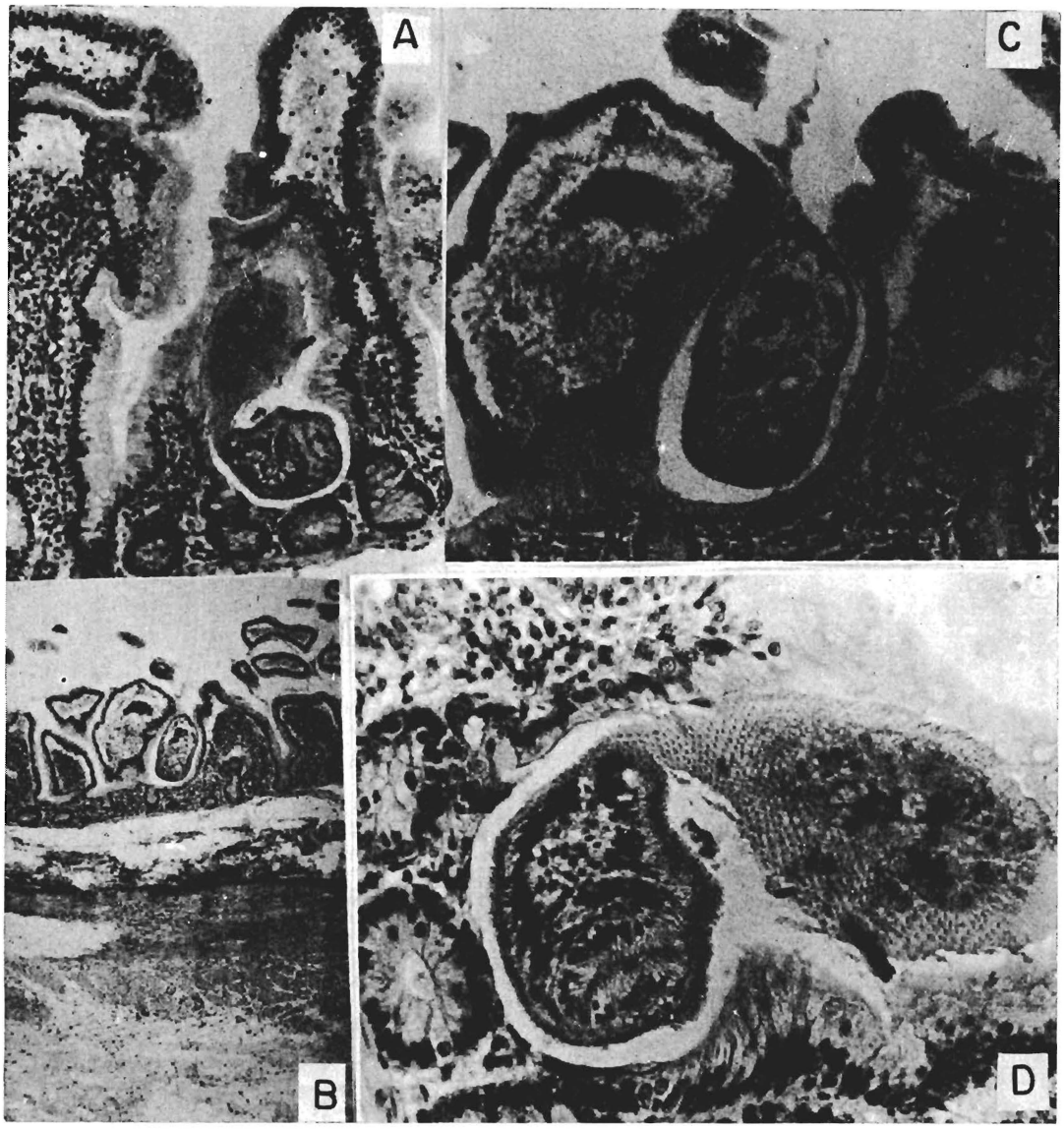

Fig. 1 A,B,C—The relationship of Heterophyid flukes in the depth of crypts of the ileal mucosa showing submucosal cedema and haemorrhage (H & E) (A x 100, B x 25, C x 400).

Fig. 1 D—Longitudinal section showing scale-like spines arranged in well-spaced rows and subterminal oral sucker, H & E x 400.

tion of small intestine one foot long showing an area of haemorrhage and perforation. Focal necrosis of mucosa was noted. Sections showed necrotizing inflammation of the tip of plicae, partly pseudoatrophy of microvilli. Two cross sections of trematodes at the bottom of crypts. Heavy infiltration of polymorphonuclear leucocytes in all layers.

Case 3 : A 73-year-old woman was admitted to Nan provincial Hospital because of abdominal mass and intestinal distention. She was operated upon on the second day of ad-

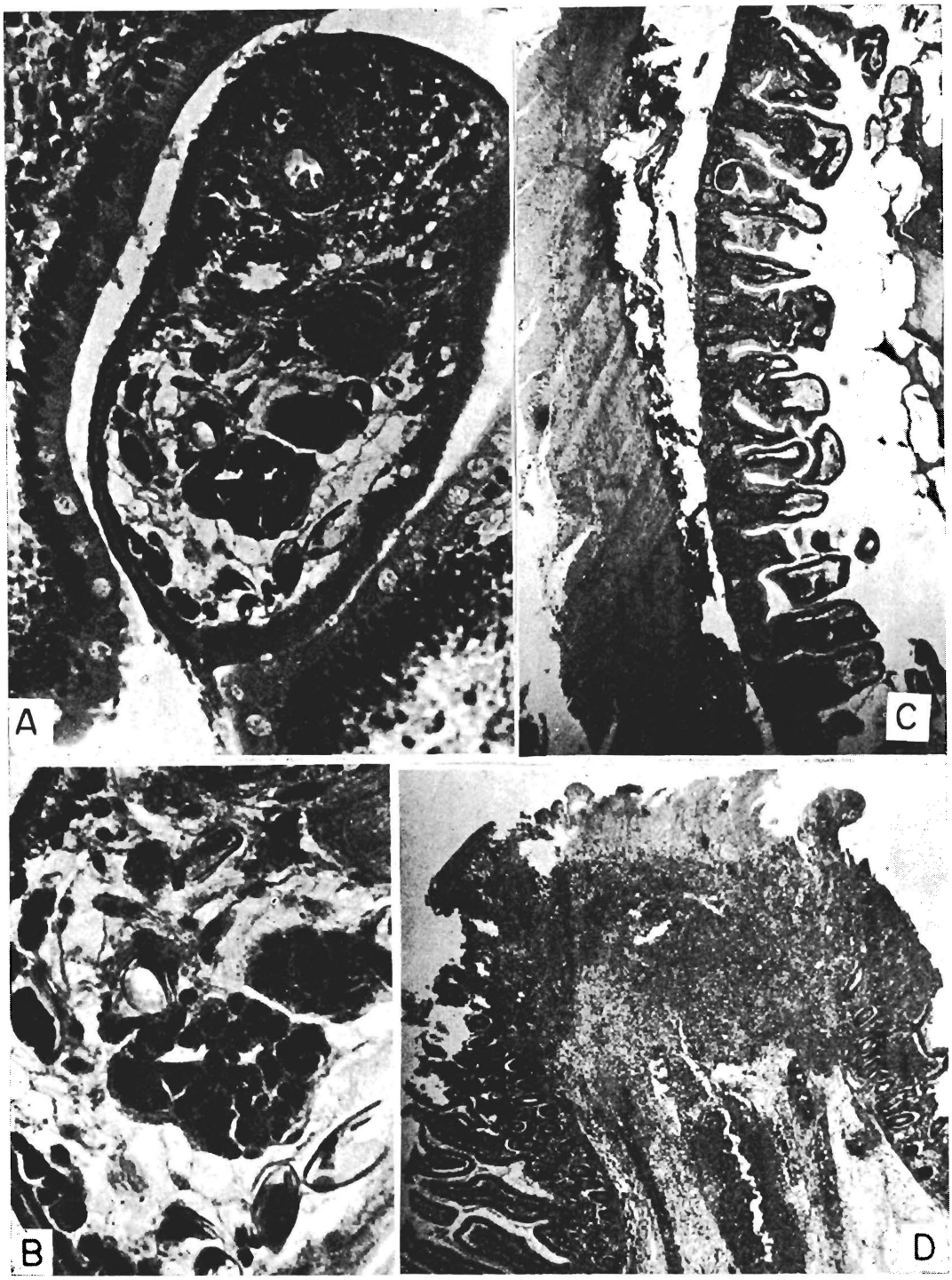

Fig. 2 A—Higher magnification of Fig. 1 C showing lateral imbricated spine and internal organs of flukes.H & E x 400.

Fig. 2 B—Heterophyid fluke showing elongated eggs in uterus. H & E x 1000.

Fig. 2 C—The relationship of Heterophyid flukes in the depth of crypts of the ileal mucosa showing submucosal oedema and haemorrhage, H & E x 25.

Fig. 2 D—Ileal mucosa showing segmental superficial necrosis and haemorrhage, at the tip of plicae. H & E x 25.

mission and a short segment of lower part of jejunum was resected.

Pathological findings (520-1681): Surgical specimen composed of a short segment of terminal ileum approximately 8.0 cm long with attached mesentery and few small lymph nodes. The surface was markedly congested and focally covered by a thin layer of fibrinopurulent exudate. Multiple histological section showed diffused submucosal oedema and heavily infiltrated by eosinophils through all layers of the intestinal wall. Three sections of Heterophyid worm with spiny cuticles were noted in the jejunal lumen. Focal separation and fragmentation of the muscular wall was also noted.

DISCUSSION

Infections with heterophyid flukes in man, are known to be widespread in Asia but the real prevalence is frequently masked by the simultaneous occurrence in the faeces of ova of *Opisthorchis* and other liver flukes. Heterophyid infection in man, therefore, are demonstrated more readily at autopsy, in tissue section than by stool examination. Most of the cases have clinical signs and symptoms that simulate an acute abdomen, appendicitis, ectopic gestation but findings at the exploratory laparotomy reveals segmental or focal inflammation of the terminal ileum. Surgical segmental resection can help the patient.

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